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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,973	11/04/2003	Vince Winstead	81044474 (202-0383)	4494

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EXAMINER	
YUAN, DAH WEI D	

ART UNIT	PAPER NUMBER
1745	

MAIL DATE	DELIVERY MODE
05/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/700,973	WINSTEAD, VINCE	
	Examiner	Art Unit	
	Dah-Wei D. Yuan	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) 7-19 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

METHOD OF OPERATING A HYBRID POWER SYSTEM WITHIN A STATE OF CHARGE WINDOW

Examiner: Yuan S.N. 10/700,973 Art Unit: 1745 May15, 2007

Detailed Action

1. The Applicant's amendment filed on March 31, 2007 was received. Claims 1,4,5,6 were amended.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on January 9m 2007.

Claim Rejections - 35 USC § 112

3. The claim rejections under 35 U.S.C. 112, second paragraph, on claims 1-6 are withdrawn, because the claims 1,4,5,6 have been amended.

Claim Rejections - 35 USC § 102

4. The claim rejections under 35 U.S.C.102(e) as being anticipated by Kopf et al. (US 6,744,237) on claims 1-6 are maintained. The rejection is repeated below for convenience.

With respect to claim 1, Kopf et al. teach a method of controlling the operation of a hybrid power system comprising (A) determining the state-of-charge of the battery pack, (B) when the fuel cell supplies all of the power to the load as the state of charge of the energy storage device falls below a second predetermined value (first value), and (C) when the fuel cell supplies

at least a portion of the power to the load as the state of charge of the energy storage is less than or equal to the first predetermined value (second value). See Column 1, Lines 31-56.

With respect to claim 2, Kopf et al. teach device (26) is used to measure load currents. See Column 3, Lines 29-40.

With respect to claim 3, the steps (A) and (B) are repeated to maintain the state-of-charge of the battery as shown in Figure 2.

With respect to claim 4, Kopf et al. teach the first value is determined by the state-of-charge of the fuel cell. See Columns 4-6, Figure 2.

With respect to claims 5,6, Kopf et al. teach the second value is determined by the total power provided by the fuel cell and the energy storage device. See Columns 4-6, Figure 2.

5. The claim rejections under 35 U.S.C.102(e) as being anticipated by Iwasaki (US 2002/0162694) on claims 1-6 are maintained.

With respect to claim 1, Iwasaki teaches a method of controlling the operation of a hybrid power system comprising (A) determining the state-of-charge of the battery (7) using a SOC sensor (13), (B) when the time average of the electrical load demand is less than the load corresponding to the maximum efficiency operating point of the fuel cell power system as the SOC of the battery is set to a first value, and (C) when the time average of electrical load demand exceeds the rated load of the fuel cell power system as the SOC of the battery is set to a second value. See Paragraphs 41-44.

With respect to claim 2, Iwasaki teaches the controller (10) is used to calculate the electrical load demand required to run the vehicle. See Abstract.

With respect to claim 3, the steps (A) and (B) are repeated to maintain the state-of-charge of the battery as shown in Figure 2.

With respect to claim 4, Iwasaki teaches teach the first value is determined by the state-of-charge of the fuel cell. See Paragraphs 42-52.

With respect to claims 5,6, Iwasaki teaches the second value is determined by the total power provided by the fuel cell and the energy storage device. See Paragraphs 42-52.

Response to Arguments

6. Applicant's arguments filed on March 31, 2007 have been fully considered but they are not persuasive.

Applicant's principal arguments are

(a) The power output of the charge carrier is conditioned upon the potential power output of the fuel cell with regard to the actual requirement of the load;

(b) the claimed invention does not require that the actual load be compared with a load corresponding to the maximum efficiency operating point of the fuel cell system.

In response to Applicant's arguments, please consider the following comments.

(a) Kopf et al. teach the fuel cell supply all of the power to the load as long as the power requirement of the load is less than or equal to an optimal power output of the fuel cell. When

the power requirement of the load exceeds the optimal power output of the fuel cell, both the energy storage device and fuel cell supply power to the load. See Column 1, Lines 42-56. This indicates that the charge carrier and fuel cell collectively provide the power to meet the load requirement wherein the power output of the charge carrier is conditioned upon the available power output of the fuel cell;

(b) Iwasaki disclosed the operating load of the fuel cell power system based on the electrical load demand. In the range A, if the state of charge of the battery is lower than the upper limit SOC_H, the fuel cell power system is operated under maximum efficiency operating point. The fuel cell supplies all of the power to the load as the state of charge of the energy storage device falls below a predetermined value. In range C, the insufficient electrical power is compensated by the battery when the electrical load demand exceeds the load of the fuel cell power system. See Figure 3, paragraphs 41-44.

Conclusion

6. **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan
May 15, 2007

DAH-WEI YUAN
PRIMARY EXAMINER